

ABSTRACT

5 In accordance with the invention, the optical power level in an optical waveguide is monitored by enclosing a length of the waveguide within an insulated cavity of comparable length and cross section, measuring a first temperature  $T_1$  within the cavity, measuring a second temperature  $T_2$  outside the cavity and deriving from the difference,  $T_1 - T_2$ , a measure of the optical power level. Exemplary apparatus for monitoring the optical power level in an optical waveguide comprises a substrate with an insulated groove for receiving an optical fiber, an insulated lid for sealing the fiber within the groove, and internal and external temperature sensors.